

REMARKS

The official action of 6 August 2008 has been carefully considered and reconsideration of the application as amended is respectfully requested.

Claim 4 has been amended to remove the basis for the rejection under 35 USC 112, second paragraph. Support for the amendment appears in the specification as filed at, for example, page 20, first full paragraph.

Claim 19 stands rejected as allegedly failing to comply with both the written description and the enablement requirements of 35 USC 112, first paragraph. Applicants respectfully traverse each of the rejections separately below.

First, Applicants respectfully note that the components of the composition defined in claim 19- -(a) a coloring agent, (b) a water soluble organic solvent, (c) water and (d) a dispersing agent - -are the same as in the other claims, with the exception that claim 19 is **narrower** in that (i) it defines the dispersing resin with product-by-process limitations that limit the resin to one that comprises carboxylic acid groups and neutralized carboxylic acid groups and (ii) it defines the molar ratio of unneutralized to total (neutralized and unneutralized) groups functionally (but within the ratio recited in claim 1), i.e. by whether the molar ratio is one that causes the claimed composition to display the preferred storage stability described on pages 56 and 57 of the specification. As discussed in MPEP 2173.05(g), there is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of

itself, render a claim improper. In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971). Since this claim is narrower than the others it is difficult to understand the basis for the rejections, as next discussed.

With respect to the rejection under the written description requirement, the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed (see MPEP 2163.02). As discussed in detail in Applicants' Amendment dated 1 May 2008 in the paragraph bridging pages 6-7, the Examples in the specification show the criticality of controlling the molar ratio of the unneutralized repeat units to total repeat units for achieving the best storability grade of "AA" in the evaluation described in the specification at page 56, and the claim limits the recited molar ratio in accordance with this description.

The specification thus clearly conveys to one of skill in the art that Applicants were describing molar ratios that satisfy the recited functional limitation. Moreover, the specification conveys that the described evaluation is advantageous for compositions generally, and not just those exemplified in the Examples. See, e.g., specification at paragraph bridging pages 15-16 and page 40, last full paragraph ("The present invention will be illustrated with reference to the following Examples, but the invention should not be construed as being limited thereto.") Under these circumstances, the specification conveys to those of skill in the art that Applicants were in possession of the invention now claimed as of the application filing date.

In contrast, the Examiner respectfully has not met the initial USPTO burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in Applicants' disclosure a description of the invention defined by the claims (see MPEP 2163.04). The Examiner has set forth only a conclusory statement which does not provide an adequate basis for rejection.

With respect to the rejection under the enablement requirement, the test of enablement is whether one of skill in the art could make or use the invention from the application as filed without **undue experimentation**. The Examiner has properly identified factors ("Wands factors") that should be considered in determining whether any experimentation required to practice the invention would be "undue", but the Examiner's perfunctory analysis of the Wands factors is respectfully flawed in that, for example, he does not recognize that the product-by-product and functional limitations in the claim **narrow** the claimed dispersing resin and the claimed molar ratio respectively, i.e., the breadth of the claim (Wands factor A) is narrower than the other claims). Moreover, the Examiner has respectfully not recognized that the specification provides a test (i.e., direction- -Wands factor F) that would enable a person of skill in the art to determine routinely (i.e., without undue experimentation) whether a dispersing resin having a particular molar ratio would meet the functional claim limitation. One of skill in the art could simply repeat the experimentation described in the specification to determine whether the claimed function is fulfilled for a given composition. Under these circumstances, the enablement requirement is satisfied even if experimentation were required. See MPEP 2164.06 ("The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is

merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed.”).

In view of the above, Applicants respectfully submit that the rejections under 35 USC 112, first paragraph should be withdrawn.

The claims stand rejected under 35 USC 102(b) as allegedly being anticipated by Yeates et al or under 35 USC 103(a) as allegedly being unpatentable over Yeates et al either alone or in combination with Yamazaki. Applicants respectfully traverse these rejections.

A main feature of the ink according to the present invention resides in that the dispersing resin contains (i) a repeating unit structure having an unneutralized group and (ii) a repeating unit structure having a neutralized group and capable of being hydrated and/or dissolved in water, wherein the unit (i) has a molar ratio in the range of from 1 to 67% based on the sum of the unit (i) and the unit (ii), thereby exhibiting remarkably excellent storage stability. This is sufficiently demonstrated in the specification, specifically Examples 1-26 in comparison with Comparative Examples 102 (Table 2). Moreover, the specification makes clear that the dispersing resins in Examples 1 to 26, each a resin containing polymerization components comprising, at least, styrene and at least one member selected from acrylic acid, methacrylic acid, acrylate and methacrylate, are mere examples among the large number of other dispersing resins described in the specification at page 10 to page 16, first paragraph.

As described in the last paragraph on page 15, the technical significance of the present invention resides in containing the dispersing resin having a specific ratio of the unit (i) relative to the sum of the unit (i) and (ii) to attain optimum balance of ink coagulation property and ejection stability. This, separate and apart from the makeup of the dispersing resin, is a distinguishing feature of the claimed invention.

In contrast, the cited references do not show or suggest the recited molar ratio or the result effective nature thereof. The Examiner has referred generally to portions of the cited primary reference as allegedly showing the recited molar ratio, but the portions of the reference to which the Examiner refers described polymers generally without describing a molar ratio of unneutralized repeat units to total repeat units within the claimed range. In the absence of a description of any species that falls within the claimed range of molar ratios, the cited reference cannot be considered to anticipate the invention defined by the claims (see MPEP 2131.03). Moreover, in the absence of any recognition in the references of the result effective nature of this claimed variable, the references cannot be considered to set forth even a *prima facie* case of obviousness for the claimed invention (see MPEP 2144.05(II)(B)). As next discussed, the prior art references do not recognize the result effective nature of the claimed parameter.

Yeates discloses a composition comprising water-dissipatable acrylic polymer, water, colorant, a water-miscible organic solvent and a water-immiscible organic solvent. The water-dissipatable acrylic polymer has preferably been obtained from the polymerization of one or more olefinically unsaturated monomers having water

dispersing groups.

Further Yeates discloses that the acid groups may be subsequently, or during formation of the polymer, fully or partially neutralized with a base containing a cationic charge to give a salt.

However, Yeates is silent about a molar ratio in the range of from 1% to 67% of the first repeating unit structure based on the sum of the first repeating unit structure and the second repeating unit structure. Moreover, Yeates does not show or suggest the result effective nature of this parameter in providing for excellent storage stability, as next discussed.

The object of Yeates is the provision of ink compositions, which are suitable for both thermal and piezo ink jet printers, having high color strength and produce images having a high light-fastness and water-fastness when printed on a substrate. Although Yeates et al refer to “Ink stability” in their examples, they do not recognize the reason for poor ink stability as is clear from Table 1 on page 14, wherein both inks of an Example (“Ink 6”) and of the Comparative Examples (“Ink C1” and “Ink C2”) are described as “poor” ink stability. Nor is there anything in Yeates to show or suggest that such stability may improved by controlling a molar ratio of unneutralized groups to the sum of neutralized and unneutralized groups in the dispersing resin of the ink compositions described therein.

In the absence of anything in Yeates to show or suggest the result effective

nature of the claimed variable (molar ratio) in improving storage stability, and since the cited secondary reference cannot supplement this deficiency in the primary reference, Applicants respectfully submit that the references cannot set forth even a *prima facie* case of obviousness for the invention as claimed. See MPEP 2144.05(II)(B) (“A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.

In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result- effective variable.).”).

Since the references cited by the Examiner cannot set forth even a *prima facie* case of obviousness the burden has not shifted to Applicants to provide rebuttal evidence. Accordingly, the claims are allowable even assuming for the sake of argument that the evidence of record were not commensurate in scope with the claims.

With particular respect to claim 19, Applicants respectfully note that the claim is additionally patentable in view of the evidence in the specification which shows the unexpectedly advantageous results in storage stability that can be achieved with the claimed aqueous ink composition. By virtue of the functional language in this claim, claim 19 **is** commensurate in scope with the evidence in the specification. Moreover, the evidence in the specification is with respect to ink compositions of the

Comparative Examples (Inks C1 and C2) that differ from the ink compositions of the Examples only with respect to the proportion of neutralized groups and are thus closer than the prior art examples. See MPEP 716.02(e)(1) (“Applicants may compare the claimed invention with prior art that is more closely related to the invention than the prior art relied upon by the examiner.”).

The Examiner has made a conclusory statement to the effect that claim 19 is allegedly not commensurate in scope with the evidence of record but respectfully has not provided any reasoning or support for this statement. In the absence of any such reasoning, Applicants respectfully submit that the rejection should be withdrawn for this reason as well.

In view of the above Applicants respectfully submit that all rejections and objections of record have been overcome. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,

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